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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,938	04/25/2001	Scott David Kurtz	Kurtz 2 - 2	6604

7590

09/30/2004

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EXAMINER

HAROLD, JEFFEREY F

ART UNIT PAPER NUMBER

2644

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/841,938

Applicant(s)

KURTZ ET AL.

Examiner

Jefferey F Harold

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claims 1-6** are rejected under 35 U.S.C. 102(e) as being anticipated by Leong et al (United States Patent 6,782,095), hereinafter referenced as Loeng.

Regarding **claim 1**, Loeng discloses a method and apparatus for performing spectral processing in tone detection. In addition, Loeng discloses a method for determining whether any of a predetermined set of tones present in a plurality of successive frames of digital samples of a received signal falls within a predetermined frequency tolerance, comprising the steps of: obtaining discrete Fourier transform pairs of in-phase and quadrature dot products of said samples and integer multiples of a base frequency, determining the phase angle for the highest power ones of said products obtained on successive frames; and subtracting an offset phase from the phase angle of said highest power ones of said products to determine the deviation of an observed tone from said predetermined frequency tolerance, as disclosed at column 13, line 8 through 20, line 63.

Regarding **claim 2**, Loeng discloses everything claimed as applied above, (see claim 1), in addition Loeng discloses wherein phase angles are computed by finding the arc tangent of said quadrature and in-phase dot products on successive ones of said frames, as disclosed at column 13, line 8 through 20, line 63.

Regarding **claim 3**, Loeng discloses everything claimed as applied above, (see claim 2), in addition Loeng discloses wherein the phase angle corresponding to said arc tangent is approximated as the quotient of the quadrature and in-phase products for small absolute values of the quotient, as disclosed at column 13, line 8 through 20, line 63.

Regarding **claim 4**, Loeng discloses everything claimed as applied above, (see claim 2), in addition Loeng discloses wherein said offset phase is proportional to the difference between an integer multiple of said base frequency and the closest one of said set of tones, as disclosed at column 13, line 8 through 20, line 63.

Regarding **claim 5**, Loeng discloses everything claimed as applied above, (see claim 1), in addition Loeng discloses wherein a change in said phase angle between successive frames of said waveform is computed, as disclosed at column 13, line 8 through 20, line 63.

Regarding **claim 6**, Loeng discloses everything claimed as applied above (see claim 5), in addition, Loeng discloses wherein the amplitude of a detected tone is compensated by a multiplicative correction of $x/\sin(x)$ based upon the frequency deviation (x) of the observed tone from a tone of said set, as disclosed at column 13, line 8 through 20, line 63.

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Allowable Subject Matter

2. **Claim 7** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferey F Harold whose telephone number is 703-306-5836. The examiner can normally be reached on Monday - Friday 9 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jefferey F Harold
Examiner
Art Unit 2644

JFH
September 22, 2004